

## ABSTRACT OF THE DISCLOSURE

A waveguide made of optical glass used as an detector in electron microscopy, having a beveled hole through which an electron beam passes and a phosphor coated region to detect secondary and back-scattered electrons. The photons generated by secondary and back-scattered electrons striking the phosphor coated region are directed to a photomultiplier detector mated to the waveguide by internal reflections which are further enhanced by reflective surfaces. Further, photon transmission from the waveguide to the photomultiplier is enhanced by providing a flared section at the mating end to reduce internal reflections.

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